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ABSTRACT

This manual is a "how to" training device for developing grade books using the AppleWorks spreadsheet subprogram with an Apple IIe or Apple IIGS Computer which has a Duodisk or two disk drives and an 80-column card. The manual provides step-by-step directions, and includes 41 figures depicting the computer screen at the various stages of the spreadsheet development sequence. (EW)

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DEVELOPING SIMPLE GRADE BOOKS USING THE APPLEWORKS SPREADSHEET SUBPROGRAM APPLE IIe OR GS COMPUTERS AND A DUODISK OR TWO DISK DRIVES

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INTRODUCTION

-"Developing Simple Grade Books Using The AppleWorks...Drive" was developed for use as a "how to" training device. It can be used with either Apple IIe or IIGS computers which have a Duodisk or two disk drives and an 80 column card installed. Its development was accomplished using an Apple Duodisk drive, 5 1/4" floppy disks, and the 1.3 Version of the AppleWorks program. Generally, other versions of the AppleWorks program as well as the smaller disk drives, presently available on the market, may be used in conjunction with the document. If the document is to be used as it was intended at the time of development, users must have the following items available to them:

1. Apple II series computer.

2. A Duodisk drive or two disk drives.

3. AppleWorks startup and AppleWorks program disks. These items may be located on opposite sides of the same computer disk.

4. One data disk.

The following skills must be mastered by users before the document can be used as it was intended. Users must be able to:

1. Turn on the Apple computer.

2. Identify the location of drives 1 and 2 of the Duodisk drive or the difference between drives 1 and 2 of some other drive arrangement.

3. Bootup the AppleWorks program.

4. Format blank data disks (blank, unused disks must be formatted before information can be stored on them). This task may be accomplished using the AppleWorks program "Main Menu" option 5 (Other Activities) and option 5 of the "Other Activities" menu.

After building a file like the one described in this document, users should be able to set up Spreadsheet files like the one described herein. Once a spreadsheet file, like the one described here, has been constructed and saved on a data disk users should attempt to modify the file such that it will better fit their individual needs. Additional guidance in this regard may be found in the AppleWorks manual which accompanies the purchase of the program. Manuals are also available from many bookstores.

Mistakes found in this document are mine.

RMS

STEPS **DIRECTIONS**

01. Load the AppleWorks program into the computer. With this task completed, your screen should look like Figure 1 (the "Main Menu" is on the screen). In the upper left corner of the screen, you should find the numeral "2" following the second word "Disk." If this is the case, proceed to step 02. If the numeral is "1," go to step number 05.

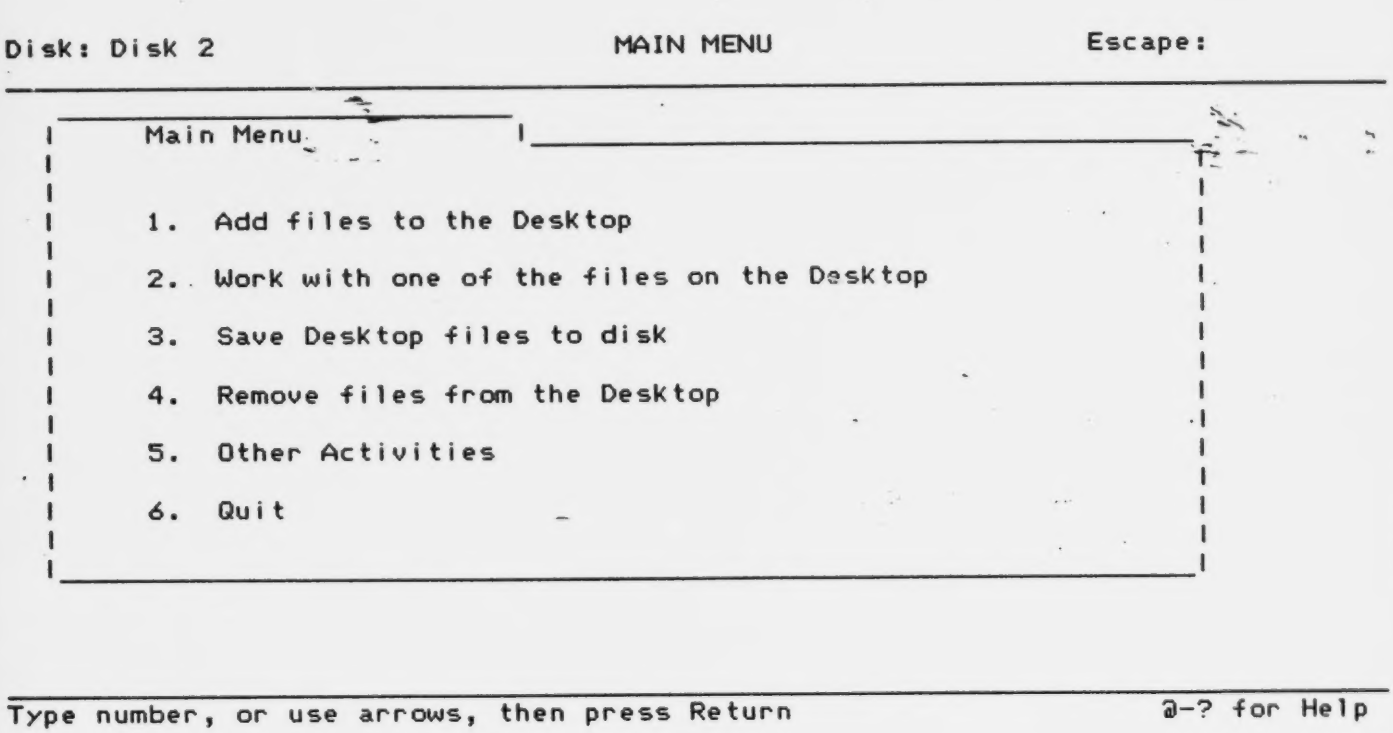

Disk: Disk 2
MAIN MENU
Escape:
Main Menu
1. Add files to the Desktop
2. Work with one of the files on the Desktop
3. Save Desktop files to disk
4. Remove files from the Desktop
5. Other Activities
6. Quit
Type number, or use arrows, then press Return
@-? for Help

Figure 1. The Computer Screen With Disk Drive Two Selected.

02. Option #1, "Add Files to the Desktop" is high lighted (usually in green, but the actual color depends on the type of equipment you have) so you should press the RETURN key once. Your screen should look like the picture shown in Figure 2 following this action.

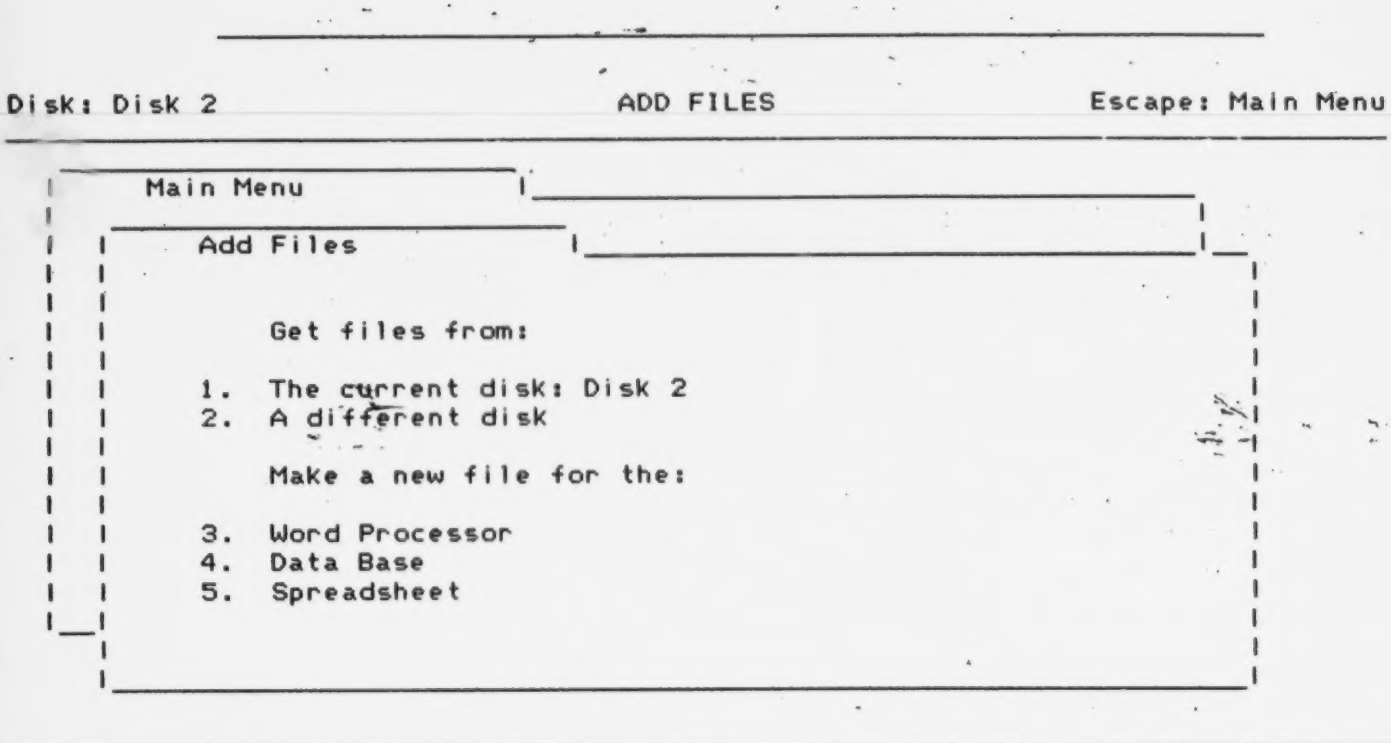


Figure 2. The Screen After Selecting, the "Add File to the Desktop" Option.

03. Press the numeral "5" key and then press the RETURN key once. This action should bring you to the "Spreadsheet" menu and the screen will appear as does the picture in Figure 3.

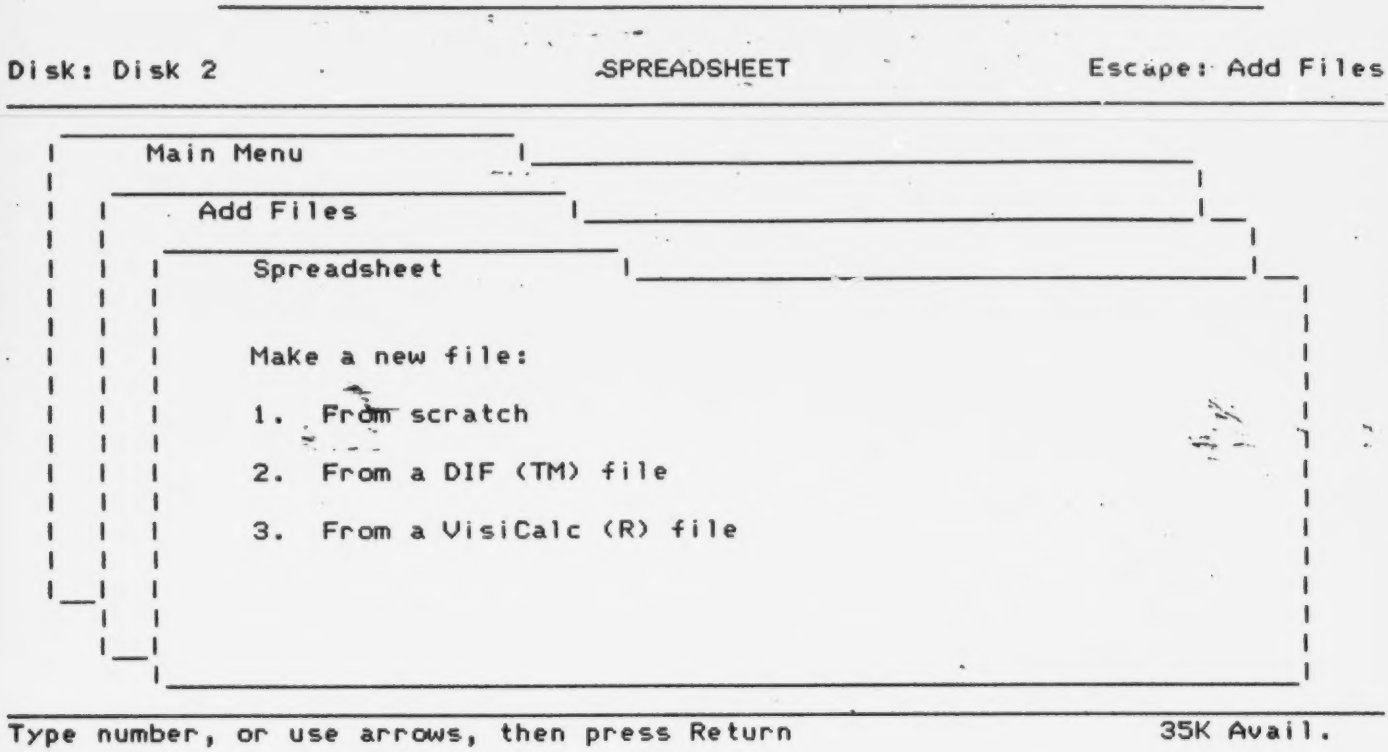


Figure 3. The "Spreadsheet" Menu.

04. If you have successfully reached this point, jump to step 08.

05. If the screen looks like the picture shown in Figure 4 (note the #1 in the upper left corner of the Figure), select option #2, "A different disk," from the "Main Menu" by pressing the DOWN-ARROW key once followed by the RETURN key once. Following this action, the screen should shift so that it appears like the picture shown in Figure 5.

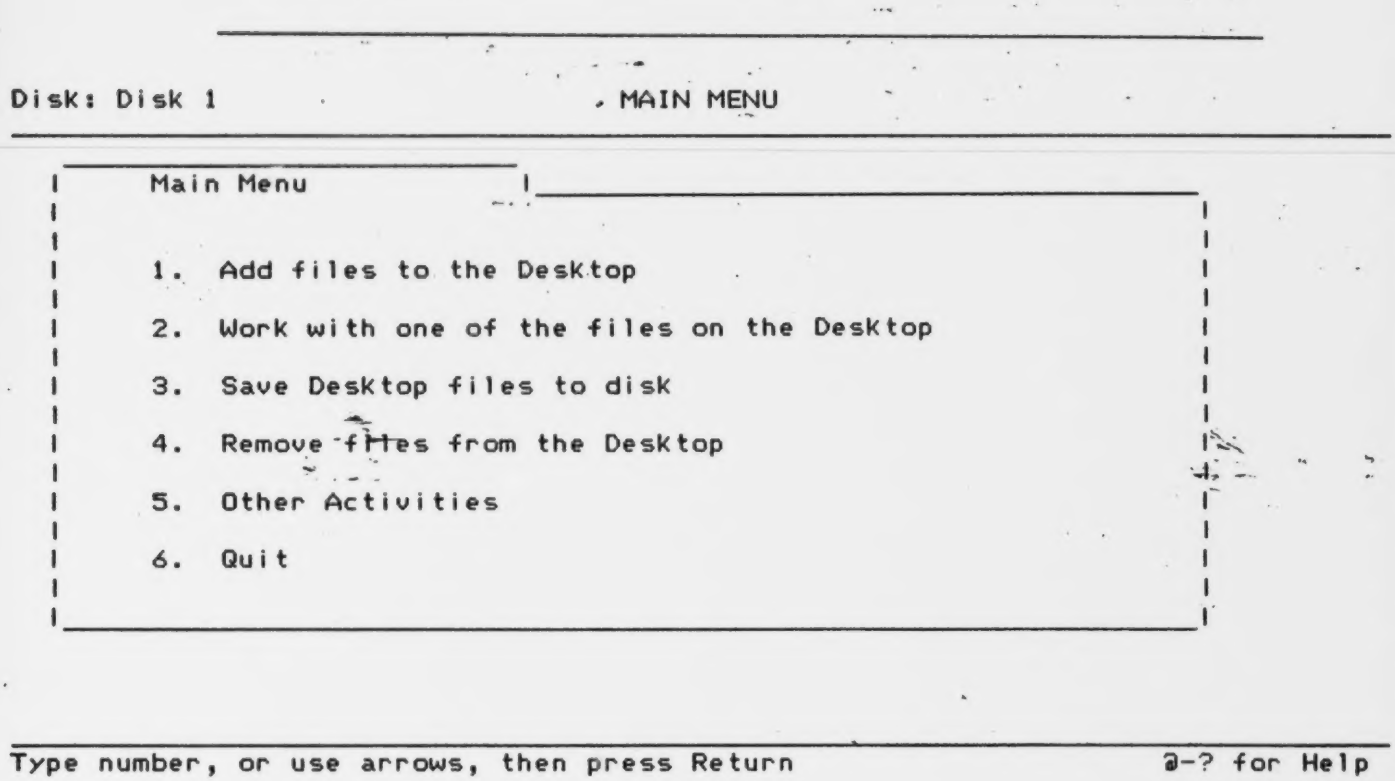

Disk: Disk 1
MAIN MENU
Main Menu
1. Add files to the Desktop
2. Work with one of the files on the Desktop
3. Save Desktop files to disk
4. Remove files from the Desktop
5. Other Activities
6. Quit
Type number, or use arrows, then press Return
?-? for Help

Figure 4. Computer Screen With "Disk: Disk 1" Selected.

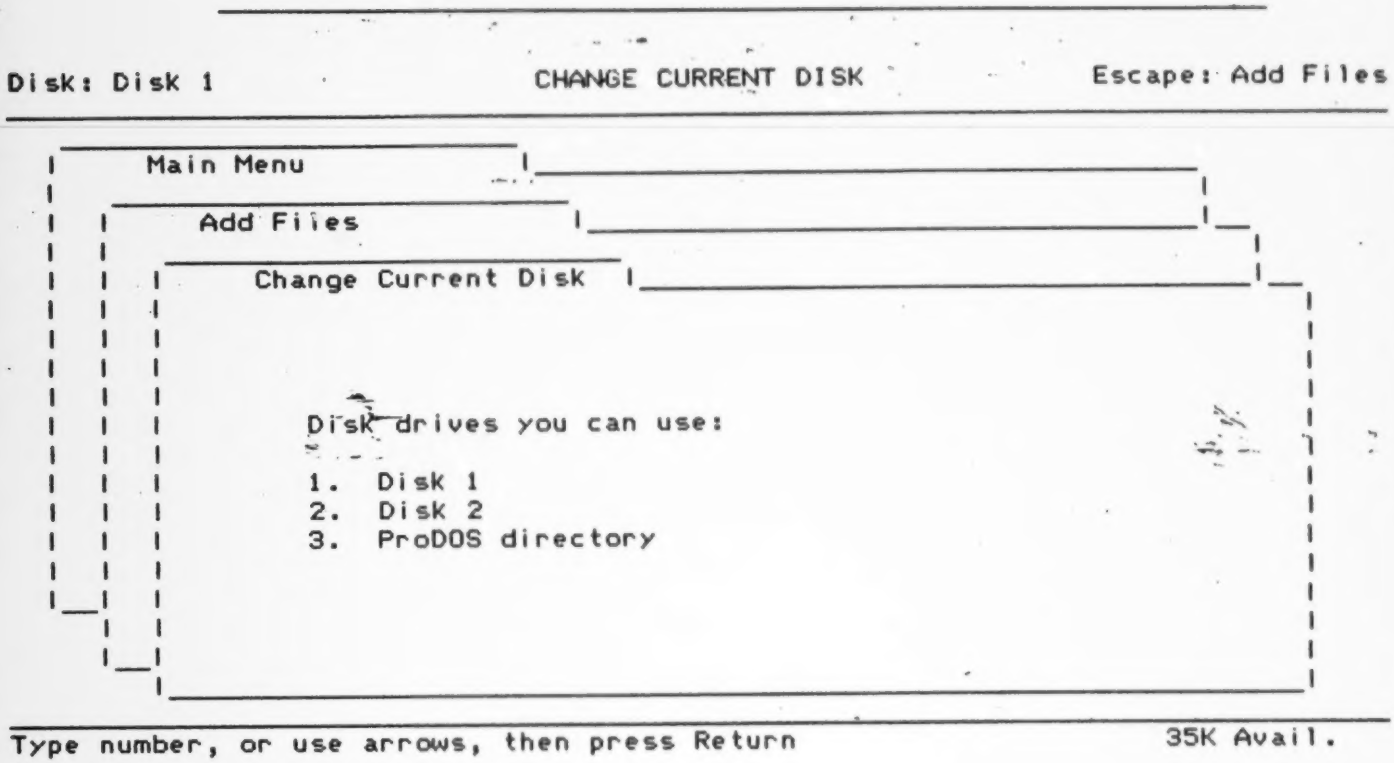


Figure 5. The Screen After Choosing, "A different disk" Option.

06. Select option #2, "Disk 2" by pressing the DOWN-ARROW key once followed by the RETURN key once. The screen should have changed following this action so that it appears as it did in Figure 2.

07. Now, complete step 03 and then jump to step 08.

08. With the screen appearing as it does in Figure 3 select option #1 (it is high lighted) by pressing RETURN once. The picture you see on the screen will change so that it looks like the one you now see in Figure 6 below.

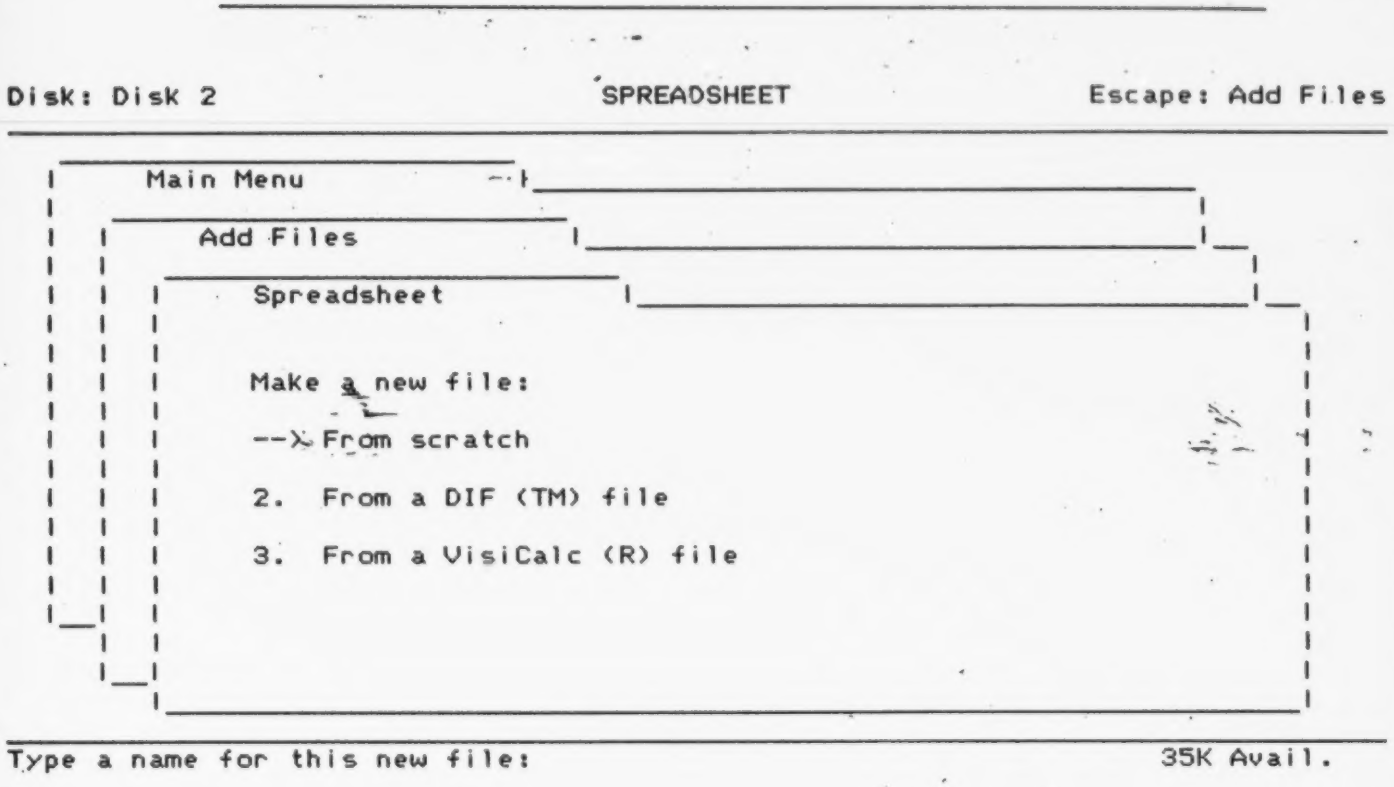


Figure 6. The Screen Showing The "From Scratch" Option Of The "Spreadsheet" Menu Selected.

09. Directions at the bottom of the screen tell you to name the the new file so type the words GRADE BOOK and then press the RETURN key once. The screen will now be identical to the picture shown in Figure 7.

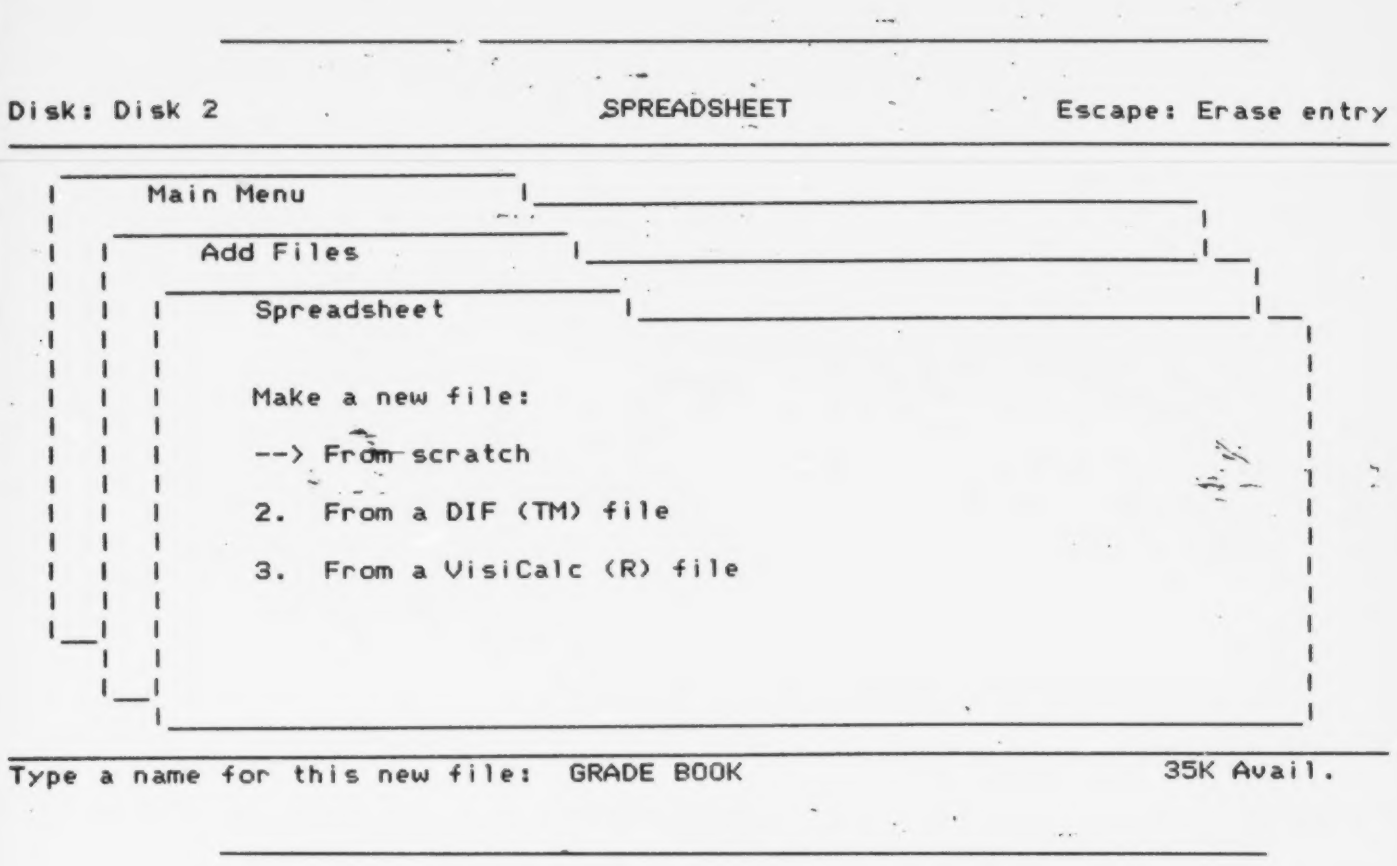


Figure 7. Blank Spreadsheet File Titled "GRADE BOOK."

10. Press the OPEN-APPLE key and the "V" key. The screen should look like the picture shown in Figure 8.

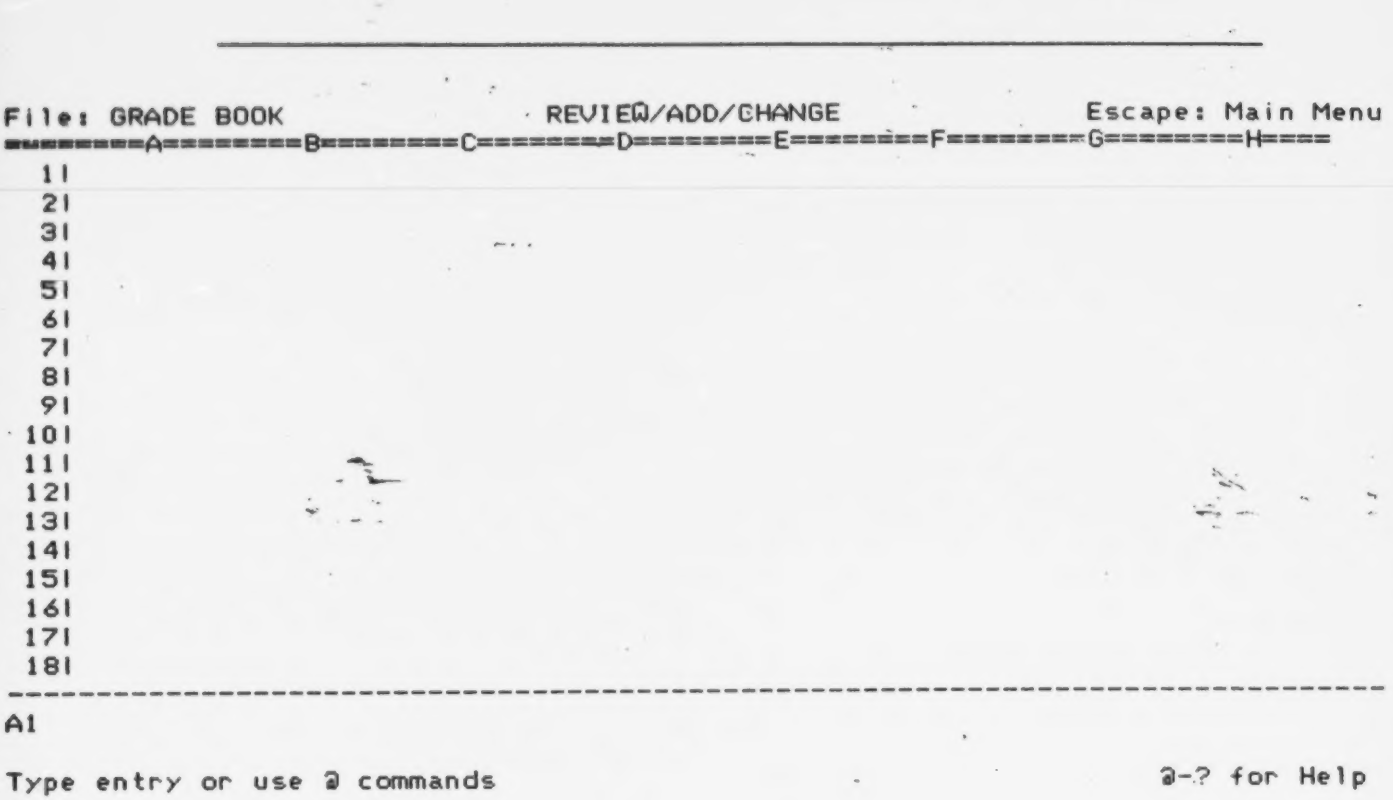


Figure 8. The Computer Screen After Pressing The Open-Apple And The "V" Keys.

11. Press the RIGHT-APPOW key twice to highlight "Column Width" shown at the bottom of the screen.

12. Press the RETURN key once. The screen should look like Figure 9. Using this option will allow you to set the width of your spreadsheet to as much as 75 spaces. If you do not set the width to that which you want or desire, the program will operate using a standard, preset value of 9 spaces.

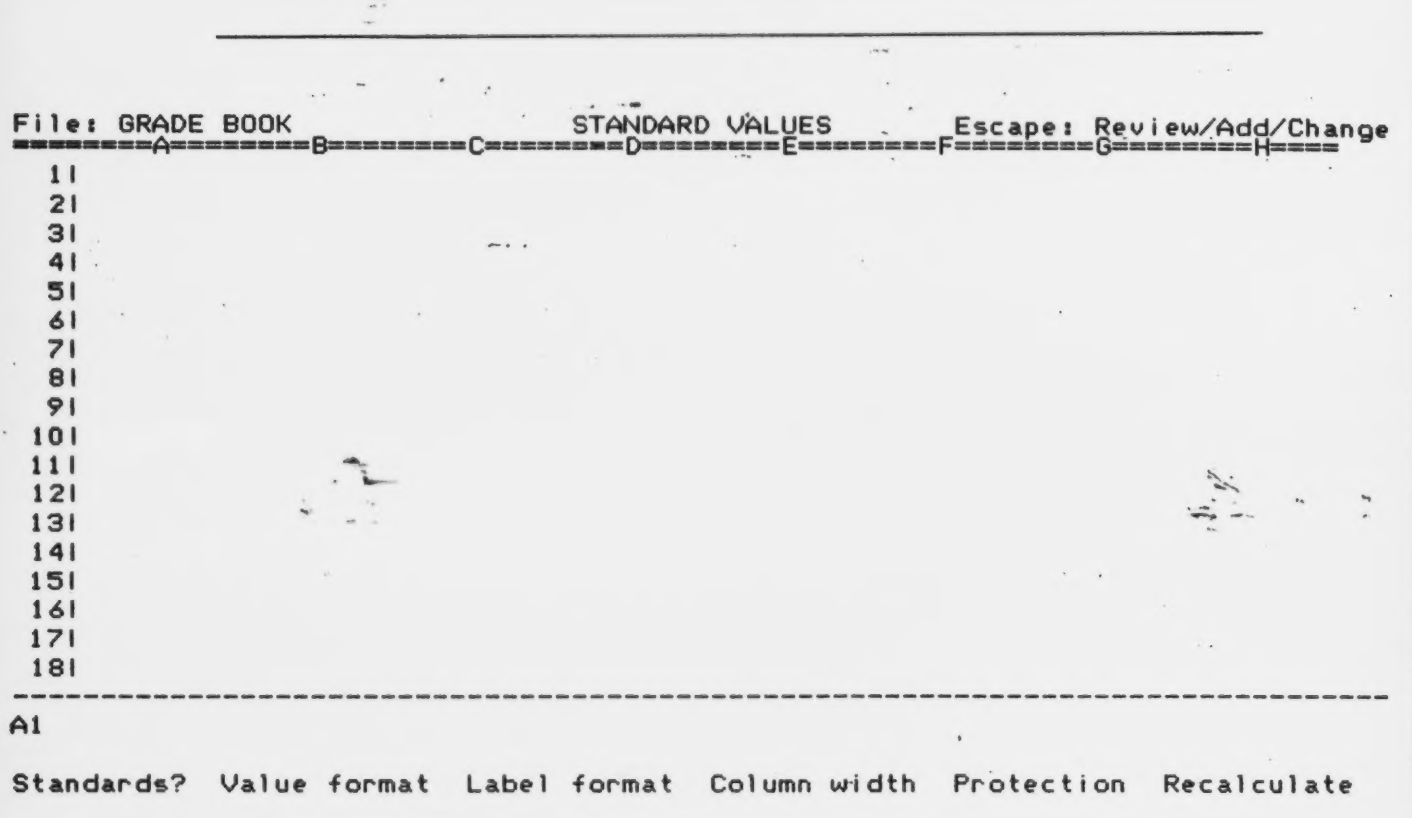


Figure 9. The Computer Screen After Selecting The "Column Width" Option.

13. Press the OPEN-APPLE key and while holding it down, press the LEFT-ARROW key several times. At the same time watch the capital letters at the top of the screen.

14. Continue the LEFT-ARROW key process started in step 13 until the spaces between the letters disappear. The screen should look like the picture in Figure 10.

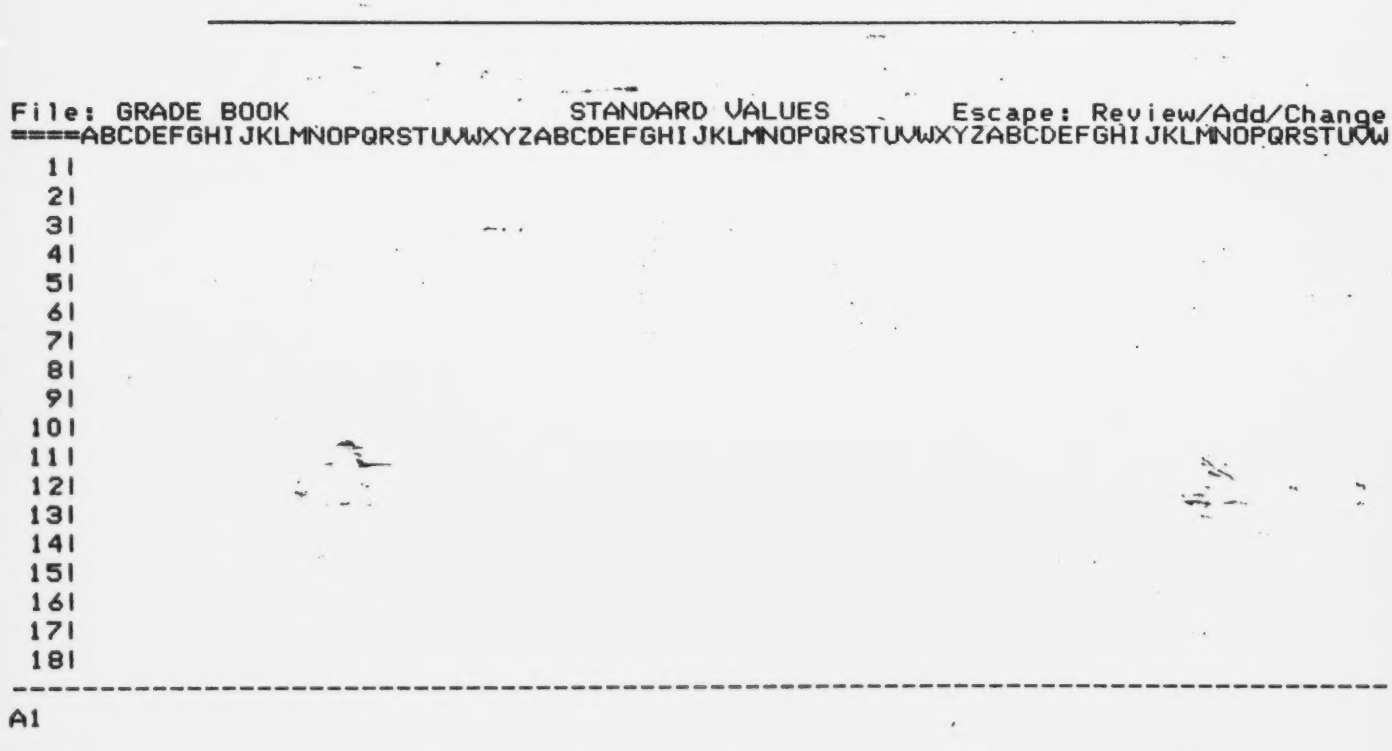


Figure 10. The Computer Screen With Showing Column Widths One Space Wide.

15. Hold down the OPEN-ARROW key and press the RIGHT-ARROW key 21 times. This action will program the computer to form columns (columns run from top to bottom) 22 spaces wide.

16. Press the RETURN key once. The screen now looks like the picture shown in Figure 11.

```
File: GRADE BOOK                    STANDARD VALUES        Escape: Review/Add/Change
==============A======================B======================C===========
  1|
  2|
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
-------------------------------------------------------------------------------
A1

Press ? and arrows to change column widths                        35K Avail.
```

Figure 11. Spreadsheet File With 22 Space Column Widths.

17. Press the OPEN-APPLE and the "L" at the same time. The screen change so that it appears like the example shown in Figure 12.

```
File: GRADE BOOK                    LAYOUT          Escape: Review/Add/Change
==============A=====================B=====================C==========
  1|
  2|
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
A1

Layout?  Entry  Rows  Columns  Block
```

Figure 12. The Computer Screen After selecting The Layout Option.

19. Press the RIGHT-ARROW key three times to highlight the "Block" option. Before continuing be sure that your moving block cursor (the light you can move around the screen using ARROW keys) is located at the top of the "D" column or in cell "D1."

20. Press the RETURN key once. Your results are shown in Figure 13.

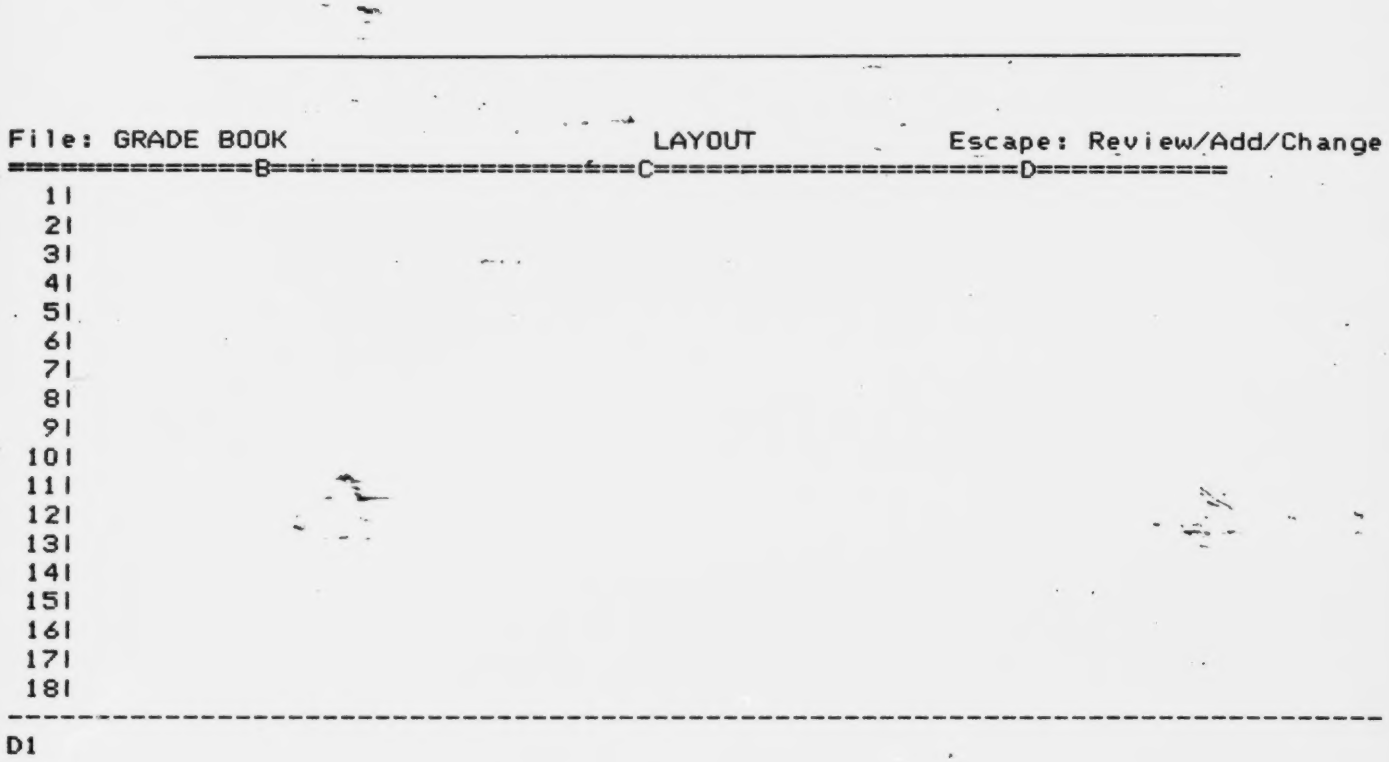


Figure 13. The Compūter Screen After Selecting The "Block" Option.

21. Follow the directions at the bottom of the screen using DOWN-ARROW until 18 rows have been highlighted.

22. Press RIGHT-ARROW until the columns over to and including column "H" have been highlighted.

23. Press the RETURN key once and then look at Figure 14. This io the way your computer monitor screen should appear.

```
File: GRADE BOOK                    LAYOUT          Escape: Review/Add/Change
==============F====================G==================H==========
  1|
  2|
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
H18

Layout?  Value format  Label format  Protection .
```

Figure 14. The Computer Screen Following The Block Highlighting Operation.

24. Press the RIGHT-ARROW key once to highlight the "Value Format" option.

25. Press the RETURN key once and then look at the screen.

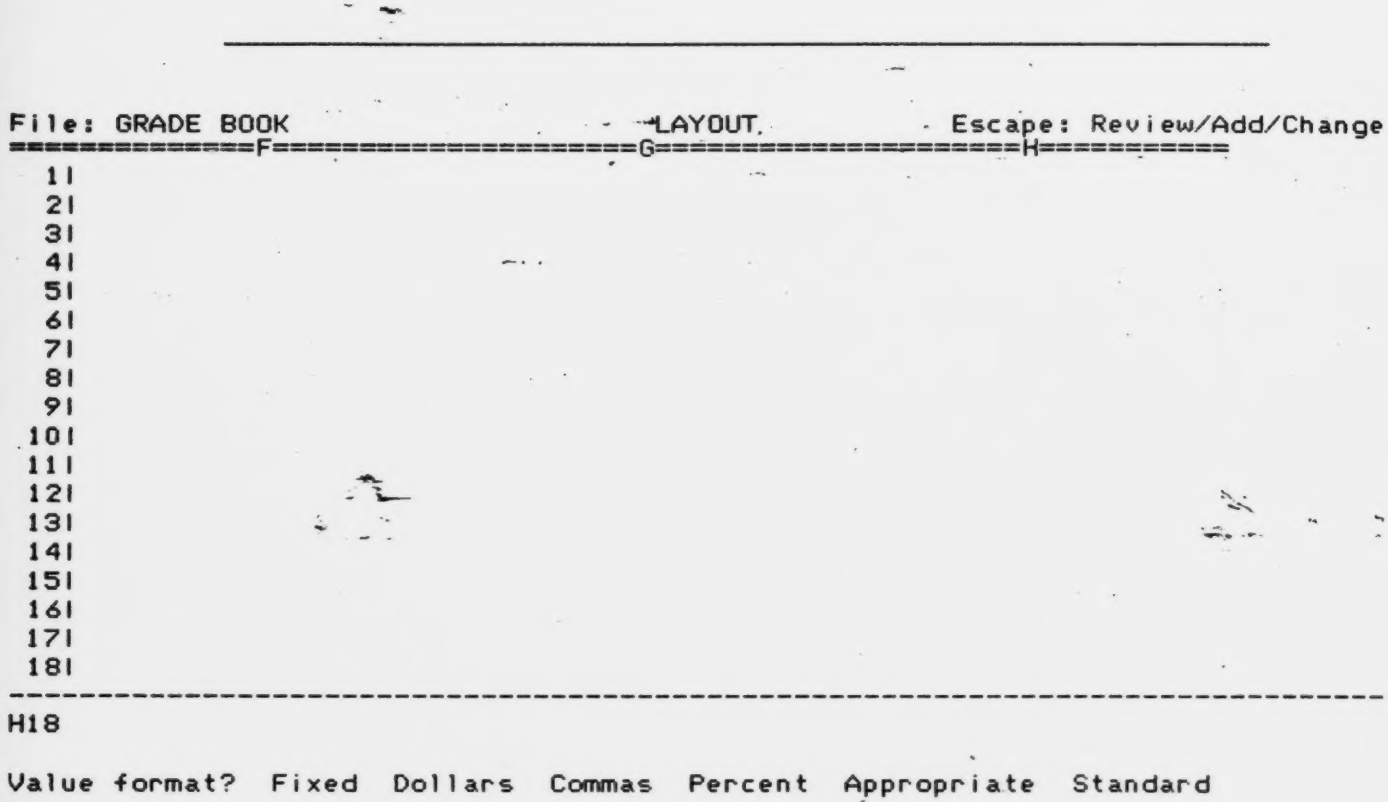


Figure 15. The Computer Screen With "Value Format" Chosen.

26. Press the RIGHT-ARROW key and highlight the "Percent" option.

27. Press the RETURN key once. The monitor screen should now look like the picture in Figure 16.

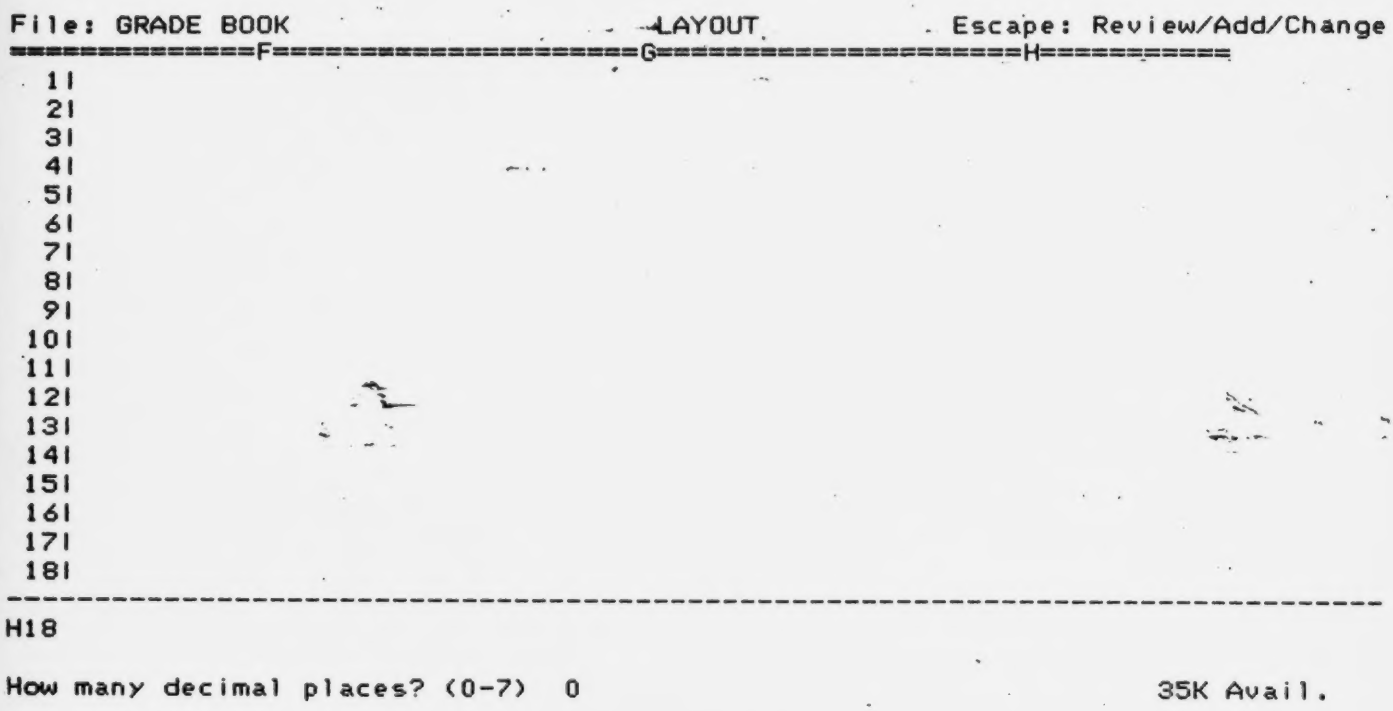


Figure 16. The Monitor Screen After Selecting The "Percent" Option.

28. Press the "2" key once to indicate two decimal places. The computer will assign two decimal places to each numerical entry made as you enter data in your file even though the number you enter may not have any decimal places.

30. Press the RETURN key once. Note in Figure 17 that the computer has given the "Value" a special code "Layout-P2" (see the lower left corner) indicating you have chosen the percent option with 2 decimal places.

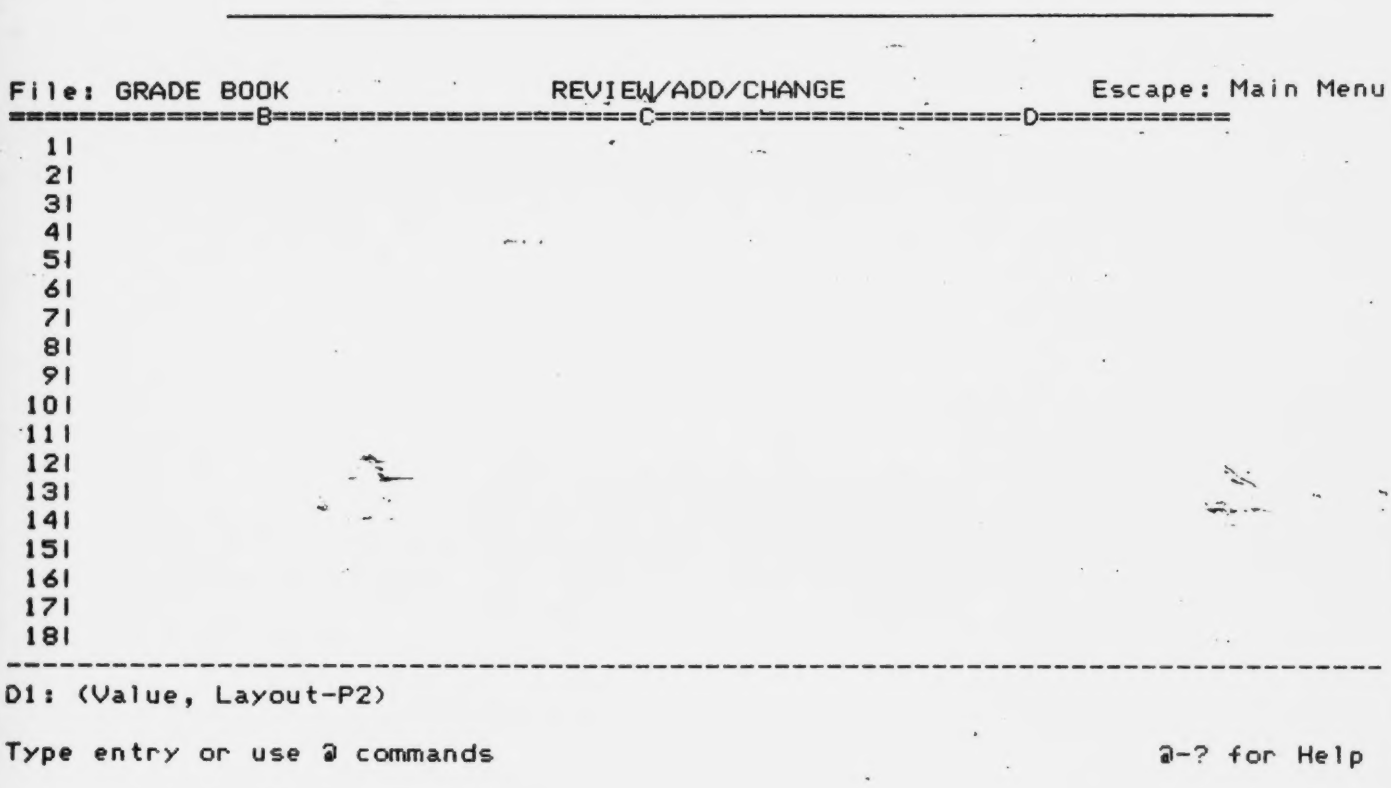


Figure 17. Value Code Following The Selection Of 2 Decimal Places.

31. Using ARROW keys, move the cursor to cell (the intersection of a column and a row) "A1" .

32. Press the CAPS LOCK key to the down position.

33. Type "COURSE" in cell "A1" and press the RETURN key once.

34. Press the RIGHT-ARROW key once and move the cursor to cell, "B1."

35. Type "AP CHEMISTRY" in cell "B1" and press the RETURN key once.

36. Press the RIGHT-ARROW key once and move the curcor to cell, "C1."

37. Type "EXAM DATES" in cell "C1" and press the RETURN key once.

38. Using the RIGHT-ARROW key, type "OCTOBER" in cell "D1," "NOVEMBER" in cell "E1," "DECEMBER" in cell "F1," and "AVERAGE GRADE =" in cell "H1."

39. Release the CAPS-LOCK key.

40. Move the cursor to cell, "A2" using DOWN-ARROW and LEFT-ARROW keys.

41. Type "Students' Names" in cell "A2" and press the RETURN key once.

42. Press the RIGHT-ARROW key once and move the cursor to cell, "B2."

43. Type "Exam Type" in cell "B2" and press the RETURN key once.

44. Press the RIGHT-ARROW key twice and move the cursor to cell, "D2."

45. Type "Quarter" in cell "D2" and press the RETURN key once.

46. Continue the process, typing "Monthly" in cell "E2," "Semester" in cell "F2," "Total Score" in cell "G2," and "(D + E + F)/3" in cell "G2." The screen for the A, B, C & D categories should appear like the picture shown in Figure 18.

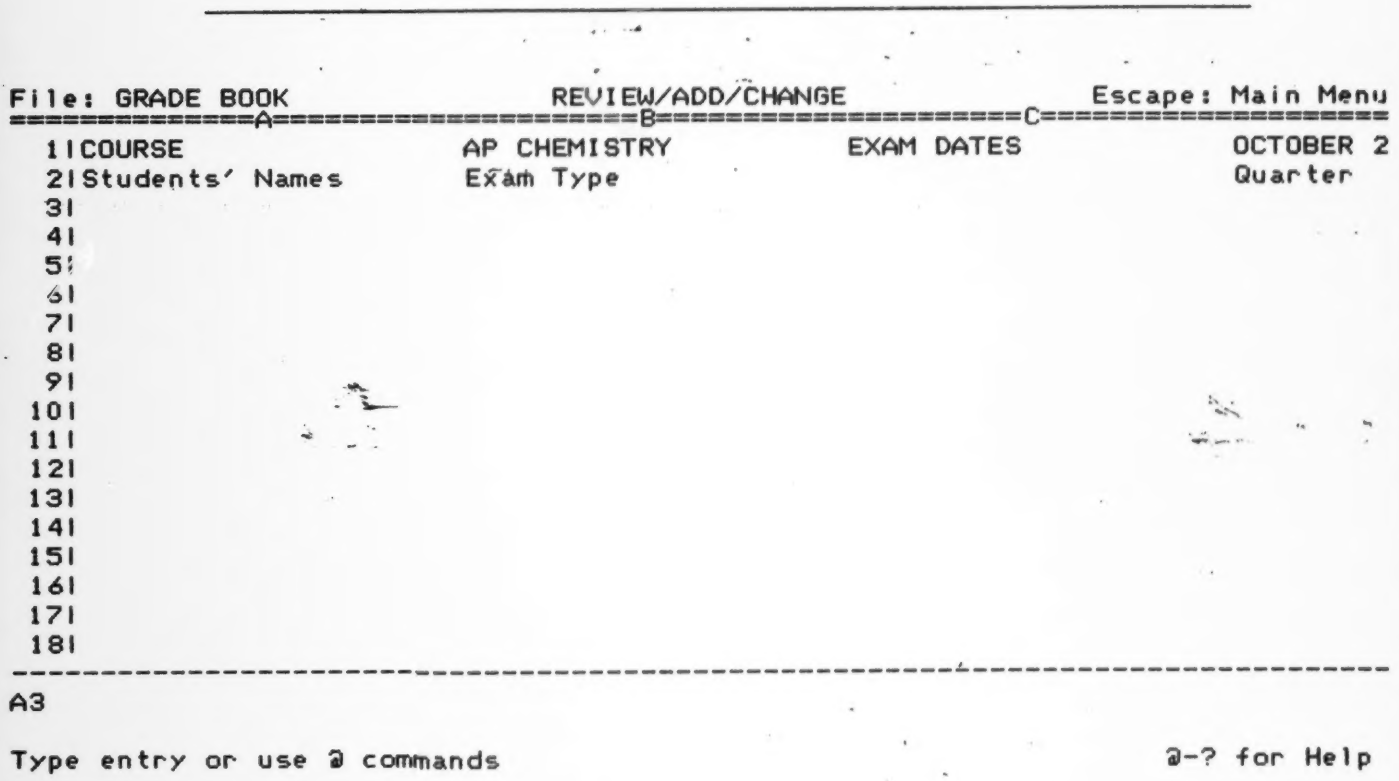


Figure 18. Spreadsheet After Entries Have Been Made In Cells A, B, C And D.

47. Use the UP-ARROW and LEFT-ARROW keys and move the cursor to cell, "A1."

48. Press the OPEN-APPLE and "L" keys at the same time. The computer monitor screen will now appear like the example shown in Figure 19.

```
File: GRADE BOOK                    LAYOUT              Escape: Review/Add/Change
              A                     B                     C
  1 COURSE                  AP CHEMISTRY          EXAM DATES            OCTOBER 2
  2 Students' Names         Exam Type                                   Quarter
  3
  4
  5
  6
  7
  8
  9
 10
 11
 12
 13
 14
 15
 16
 17
 18
A3

Layout?  Entry  Rows  Columns  Block
```

Figure 19. Screen With The Open-Apple-L Option Selected.

49. Press the RIGHT-ARROW key three times to highlight the "Block" option.

50. Press the RETURN key once and then look at Figure 20.

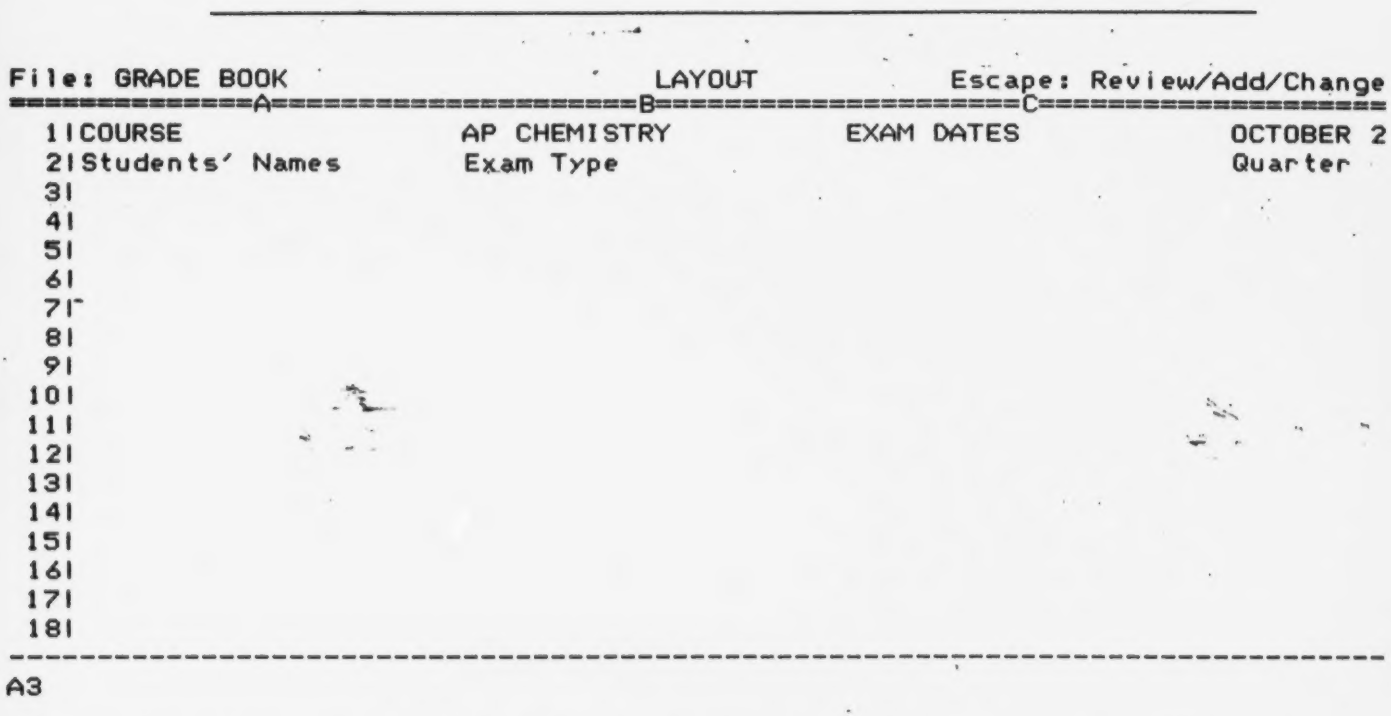


Figure 20. The Monitor Screen After Selecting The "Block" Option.

51. Press the DOWN-ARROW and RIGHT-ARROW keys a sufficient number of times to highlight all cells from "A1" to "A2" and "A1" to "H1."

52. Press the RETURN key once. See Figure 21, your screen should appear like this.

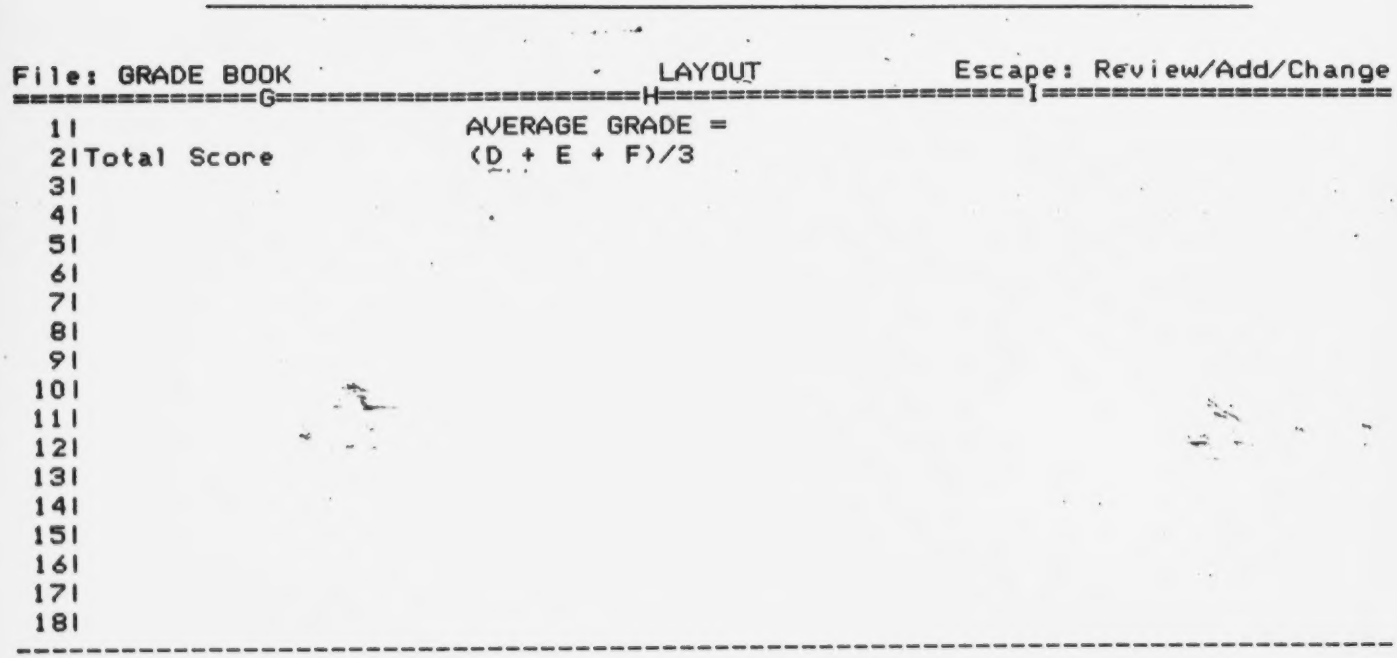


Figure 21. The Monitor Following The Highlighting Operation.

53. Press the RIGHT-ARROW key once and highlight the "Label Format"

54. Press the RETURN key once. This operation should select the justify operations shown in Figure 22.

```
File: GRADE BOOK                    LAYOUT          Escape: Review/Add/Change
              G                     H                     I
  1|                          AVERAGE GRADE =
  2|Total Score               (D + E + F)/3
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
H2: (Label) (D + E + F)/3

Label format?  Left justify  Right justify  Center  Standard
```

Figure 22. The Screen After Selecting The Label Format Option.

55. Press the RIGHT-ARROW key three times to highlight the "Center" option.

56. Press the RETURN key once. Now the screen looks the picture shown in Figue 23 with the "A" and "B" cell entries centered.

```
File: GRADE BOOK                    REVIEW/ADD/CHANGE                    Escape: Main Menu
==========A=========================B=========================C==========
  1|         COURSE                  AP CHEMISTRY                 EXAM DATES
  2|    Students' Names          ...  Exam Type
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
A1: (Label, Layout-C) COURSE

Type entry or use / commands                                        /-? for Help
```

Figure 23. The Computer Screen Following Use Of The Center Option.

57. Examine cells "D3 - H3," shown in Figures 24 and 25.

```
File: GRADE BOOK                    REVIEW/ADD/CHANGE                Escape: Main Menu
              C                       D                       E
  1|      EXAM DATES                OCTOBER                 NOVEMBER                DE
  2|                                 Quarter                 Monthly                 Se
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
C1: (Label, Layout-C) EXAM DATES

Type entry or use @ commands                                        @-? for Help
```

Figure 24. Cells D3 And E3 Completed.

```
File: GRADE BOOK              REVIEW/ADD/CHANGE              Escape: Main Menu
             F                       G                       H
  1|       DECEMBER                                      AVERAGE SCORE
  2|       Semester              Total Score              (D + E + F)/3
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
H1: (Label, Layout-C) AVERAGE SCORE

Type entry or use @ commands                                    @-? for Help
```

Figure 25. Cells G3 and H3 Completed.

58. Using the ARROW keys, move the cursor to cell "G3."

59. Place the CAPS LOCK key in the down position.

60. Hold the SHIFT key down and press the "2" key so that a "@" appears at the bottom left corner of the screen. Note the G3 at the bottom left corner of the screen. This means the cursor and therefore the formula about to be typed will be for cell "G3."

61. Immediately following the "@," type "SUM."

62. Immediately following "SUM," type "(D3...F3)." The lower left side of the screen should show, "@SUM(D3...F3)." This sentence tells the computer to add all of the numbers entered in cells "D3" through "F3" and report the sum in of those numerals in cell "G3." See Figure 26.

```
~File: GRADE.BOOK                    REVIEW/ADD/CHANGE    Escape: Restore former entry
==============F=======================G=======================H==========
  1|        DECEMBER                                        AVERAGE SCORE
  2|        Semester                  Total Score           (D + E + F)/3
  3|
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
G3: (Value, Layout-P2)
Value: @SUM(D3...F3)
Complete the value
```

Figure 26. Summation Formula For Cell G3.

63. Press the RETURN key once and examine Figure 27.

```
File: GRADE.BOOK          REVIEW/ADD/CHANGE          Escape: Main Menu
              F                    G                    H
  1|      DECEMBER                                AVERAGE SCORE
  2|      Semester          Total Score           (D + E + F)/3
  3|                                    0.00%
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
G3: (Value, Layout-P2) @SUM(D3...F3)

Type entry or use @ commands                                  @-? for Help
```

Figure 27. The Screen After The First Summation Formula Has Been Entered By Pressing The Return Key.

64. Examine Figure 27! Cell "G3" shows 0.00% indicating that if a change is not made percents will be shown in this column. The formula for this cell, however, states that the Figure in the cell will be simple sum of the values recorded in cells "D3" through "F3."

65. Press the OPEN-APPLE and the "L" keys at the same time. You should see a screen that looks like Figure 28.

```
File: GRADE.BOOK                        LAYOUT          Escape: Review/Add/Change
==============F=======================G=======================H===========
   1|        DECEMBER                                    AVERAGE SCORE
   2|        Semester     . . .    Total Score           (D + E + F)/3
   3|                                          0.00%
   4|
   5|
   6|
   7|
   8|
   9|
  10|
  11|
  12|
  13|
  14|
  15|
  16|
  17|
  18|
--------------------------------------------------------------------------------
G3: (Value, Layout-P2) @SUM(D3...F3)

Layout?  Entry  Rows  Columns  Block
```

Figure 28. The Monitor After Pressing OPEN-APPLE And L Keys At The Same Time.

66. Press the RIGHT-ARROW key twice to highlight the "Columns" option.

67. Press the RETURN key once and examine Figure 29.

```
File: GRADE.BOOK                    LAYOUT          Escape: Review/Add/Change
             F                      G                    H
  1|       DECEMBER                                  AVERAGE SCORE
  2|       Semester            Total Score           (D + E + F)/3
  3|                                    0.00%
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
G3: (Value, Layout-P2) @SUM(D3...F3)

Use cursor moves to highlight Columns, then press Return          34K Avail.
```

Figure 29. The Monitor Screen After Selecting The Columns Option.

68. With the G Column Lighted, press the RETURN key once. The screen should appear identical to the example shown in Figure 30.

```
File: GRADE.BOOK                    LAYOUT          Escape: Review/Add/Change
==============F====================G====================H==========
  1|       DECEMBER                                    AVERAGE SCORE
  2|       Semester            Total Score             (D + E + F)/3
  3|                                      0.00%
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
G3: (Value, Layout-P2) @SUM(D3...F3)

Layout? Value format  Label format  Protection  Column width
```

Figure 30. The Screen with The Column Option Chosen.

69. Press the RETURN key once to select the "Value format" option. See Figure 31.

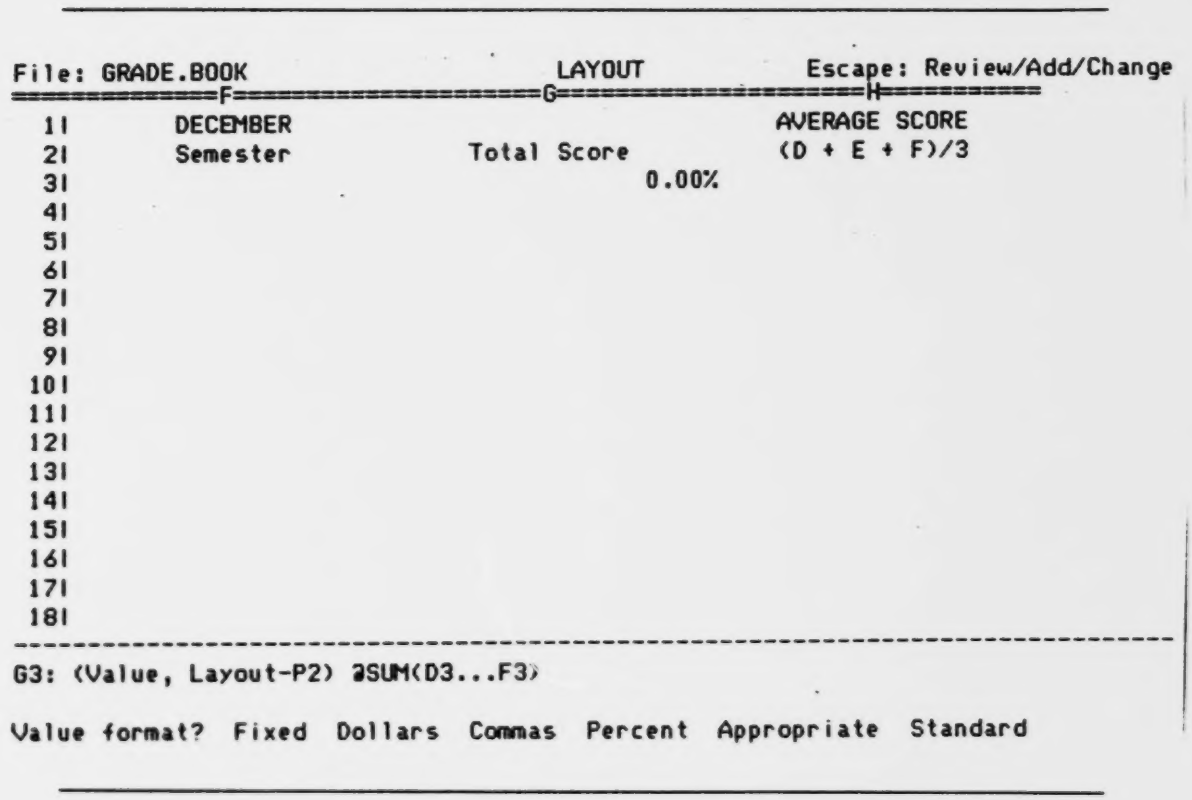


Figure 31. Value Format Selected.

70. Press the RIGHT-ARROW key five times to select the "Standard" option. The monitor screen should look like Figure 32.

```
File: GRADE.BOOK                REVIEW/ADD/CHANGE              Escape: Main Menu
             F                        G                        H
  1|       DECEMBER                                        AVERAGE SCORE
  2|       Semester              Total Score               (D + E + F)/3
  3|                                          0
  4|
  5|
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
G3: (Value) @SUM(D3...F3)

Type entry or use @ commands                                    @-? for Help
```

Figure 32. The Screen After Choosing The Standard Option.

71. Move the cursor to the "G4" cell and write a summation formula for this row. If you have written it correctly it should be, "@SUM(D4...F4)."

72. Press the RETURN key once to enter the formula.

73. Press the DOWN-ARROW key once, moving the cursor to the "G5" cell.

74. Write a formula for cell, "G5," followed by cells "G6" through "G18." The monitor screen now looks like the picture shown in Figure 33.

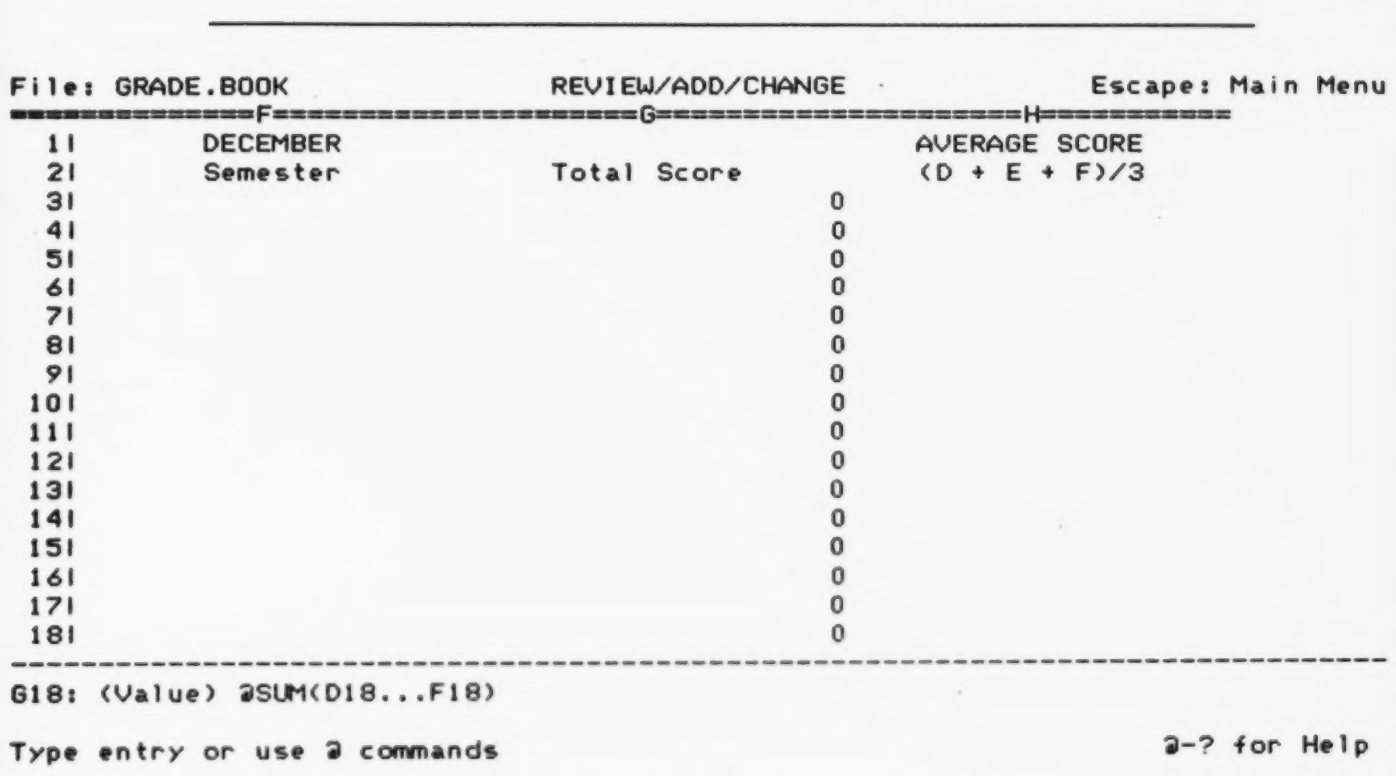


Figure 33. The Monitor Screen After Writing Summation Formulas For Cells G3 Through G18.

75. Move the cursor to cell "H3" using RIGHT-ARROW and UP-ARROW keys.

76. Type "@" followed by "AVG" and then (D4...F4). The complete formula is @AVG(D4...F4). This is the cell formula for H3. It tells the computer to computer the average of the sum of the numerals entered in cells "D4" through "F4." See Figure 34.

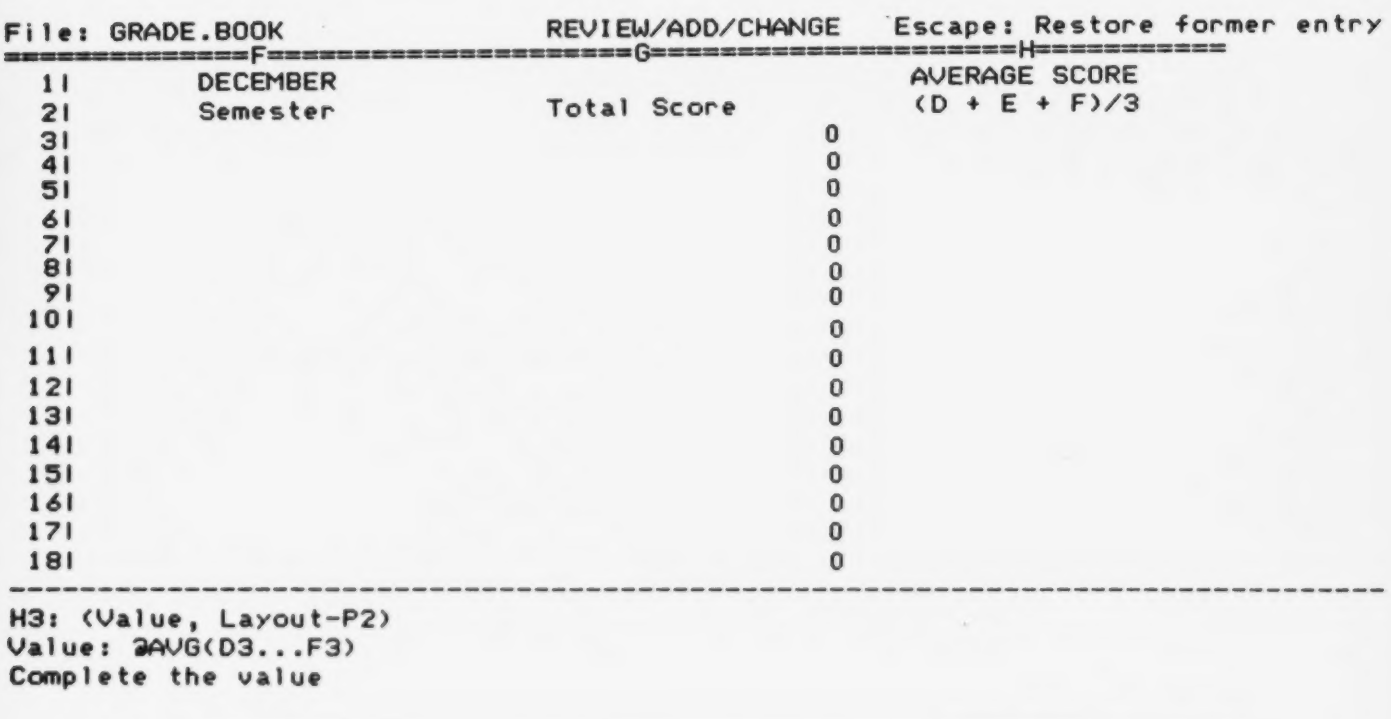


Figure 34. The Computer Screen Showing The Averaging Formule For Cell H3.

77. Press the RETURN key once to enter the formula. The monitor screen now looks like the picture shown in Figure 35. The computer prints the word, "ERROR" in the cell because as yet there are no values in cells "D3" through "F3." Mathematically, zero, the present sum of the values in those three cells cannot be divided by 3 to derive a mean or average value.

```
File: GRADE.BOOK                REVIEW/ADD/CHANGE              Escape: Main Menu
=============F=====================G=====================H==========
  1|        DECEMBER                                        AVERAGE SCORE
  2|        Semester                 Total Score            (D + E + F)/3
  3|                                                 0                  ERROR
  4|                                                 0
  5|                                                 0
  6|                                                 0
  7|                                                 0
  8|                                                 0
  9|                                                 0
 10|                                                 0
 11|                                                 0
 12|                                                 0
 13|                                                 0
 14|                                                 0
 15|                                                 0
 16|                                                 0
 17|                                                 0
 18|                                                 0
-------------------------------------------------------------------------------
H3: (Value, Layout-P2) @AVG(D3...F3)

Type entry or use @ commands                                    @-? for Help
```

Figure 35. The Monitor Screen After The Cell H3 Averaging Formula Has Been Entered.

78. Write a formual for the average of numbers entered in cells "D4" through "F4." The fomula, correctly written should read, "@AVG(D4...F4)."

79. Press the RETURN key once to enter the formula in cell "H4."

80. Press the DOWN-ARROW key once and move the cursor to cell, "H5."

81. Write a formula for cell, "H5" using the same process you uSed the cell "H4."

82. Enter the cell "H5" formula by pressing the RETURN key once.

83. Repeat the formula writing process for cells, "H6" through "H18." Since numerals have not been entered yet in any of the cells, the screen should appear like picture in Figure 36.

```
File: GRADE.BOOK                  REVIEW/ADD/CHANGE                Escape: Main Menu
                  F                        G                        H
  1|       DECEMBER                                        AVERAGE SCORE
  2|       Semester                Total Score             (D + E + F)/3
  3|                                                 0                    ERROR
  4|                                                 0                    ERROR
  5|                                                 0                    ERROR
  6|                                                 0                    ERROR
  7|                                                 0                    ERROR
  8|                                                 0                    ERROR
  9|                                                 0                    ERROR
 10|                                                 0                    ERROR
 11|                                                 0                    ERROR
 12|                                                 0                    ERROR
 13|                                                 0                    ERROR
 14|                                                 0                    ERROR
 15|                                                 0                    ERROR
 16|                                                 0                    ERROR
 17|                                                 0                    ERROR
 18|                                                 0                    ERROR
--------------------------------------------------------------------------------
H18: (Value, Layout-P2) @AVG(D18...F18)

Type entry or use @ commands                                      @-? for Help
```

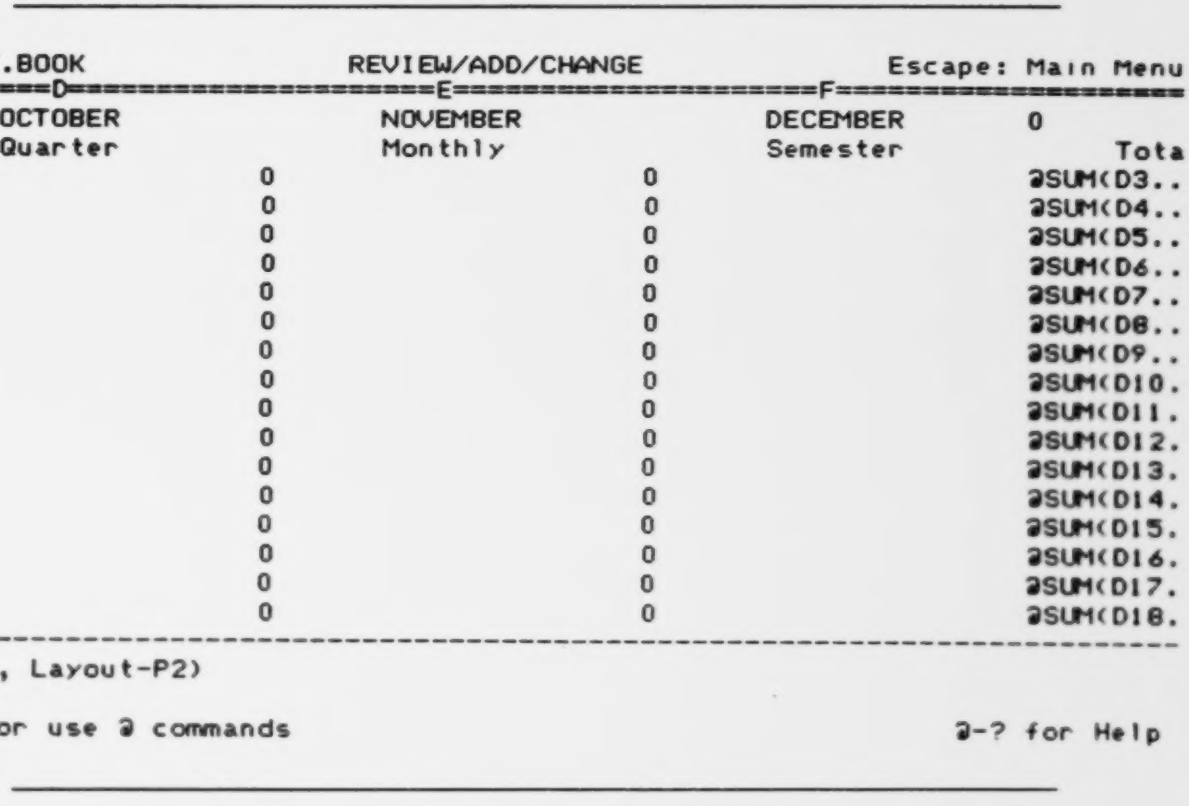
Figure 36. The Monitor Screen After Averaging Formulas Have Been Written For All Column "H" Cells.

84. Press the OPEN-APPLE and "Z" keys at the same time to examine the cell formulas you have written and to look for mistakes. See Figures 37 and 38.

```
File: GRADE.BOOK                REVIEW/ADD/CHANGE                Escape: Main Menu
             F                        G                        H
  11         DECEMBER        0                                  AVERAGE SCORE
  21         Semester                Total Score                (D + E + F)/3
  310                        @SUM(D3...F3)                      @AVG(D3...F3)
  410                        @SUM(D4...F4)                      @AVG(D4...F4)
  510                        @SUM(D5...F5)                      @AVG(D5...F5)
  610                        @SUM(D6...F6)                      @AVG(D6...F6)
  710                        @SUM(D7...F7)                      @AVG(D7...F7)
  810                        @SUM(D8...F8)                      @AVG(D8...F8)
  910                        @SUM(D9...F9)                      @AVG(D9...F9)
 1010                        @SUM(D10...F10)                    @AVG(D10...F10)
 1110                        @SUM(D11...F11)                    @AVG(D11...F11)
 1210                        @SUM(D12...F12)                    @AVG(D12...F12)
 1310                        @SUM(D13...F13)                    @AVG(D13...F13)
 1410                        @SUM(D14...F14)                    @AVG(D14...F14)
 1510                        @SUM(D15...F15)                    @AVG(D15...F15)
 1610                        @SUM(D16...F16)                    @AVG(D16...F16)
 1710                        @SUM(D17...F17)                    @AVG(D17...F17)
 1810                        @SUM(D18...F18)                    @AVG(D18...F18)
--------------------------------------------------------------------------------
H18: (Value, Layout-P2) @AVG(D18...F18)

Type entry or use @ commands                                    @-? for Help
```

Figure 37. Cell Summation And Averaging Formulas.



```
File: GRADE.BOOK                    REVIEW/ADD/CHANGE                Escape: Main Menu
             D                          E                          F
  11      OCTOBER                   NOVEMBER                  DECEMBER          0
  21      Quarter                   Monthly                   Semester        Tota
 310                0                         0                          @SUM(D3..
 410                0                         0                          @SUM(D4..
 510                0                         0                          @SUM(D5..
 610                0                         0                          @SUM(D6..
 710                0                         0                          @SUM(D7..
 810                0                         0                          @SUM(D8..
 910                0                         0                          @SUM(D9..
1010                0                         0                          @SUM(D10.
1110                0                         0                          @SUM(D11.
1210                0                         0                          @SUM(D12.
1310                0                         0                          @SUM(D13.
1410                0                         0                          @SUM(D14.
1510                0                         0                          @SUM(D15.
1610                0                         0                          @SUM(D16.
1710                0                         0                          @SUM(D17.
1810                0                         0                          @SUM(D18.
D18: (Value, Layout-P2)

Type entry or use @ commands                                          @-? for Help
```

Figure 38. Summation And Averaging Formulas Prior To Entering Data In The File.

85. Correct mistakes in your foumulas if there are any.

86. Use the ARROW keys to highlight a cell having an incorrect formula. Then retype the formula, correcting it as you go. Press the RETURM key once to enter the corrected formula and proceed.

87. Press the OPEN-APPLE an the "Z" keys to return to the original format.

88. Enter real world data in your file. See Figures 39, 40 and 41.

```
File: GRADE.BOOK                    REVIEW/ADD/CHANGE                Escape: Main Menu
              A                          B                          C
  1|         COURSE                AP CHEMISTRY              EXAM DATES              OC
  2|   Students' Names              Exam Type                                         Qu
  3|Abbott, Janet L.
  4|Jones, George M.
  5|Williams, Jan P.
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
A5: (Label) Williams, Jan P.

Type entry or use @ commands                                        @-? for Help
```

Figure 39. Spreadsheet Data Entries.

```
File: GRADE.BOOK                REVIEW/ADD/CHANGE              Escape: Main Menu
             C                        D                        E
  1|      EXAM DATES              OCTOBER                  NOVEMBER
  2|                               Quarter                  Monthly
  3|                                      78.70%                   83.50%
  4|                                      82.50%                   97.30%
  5|                                      97.20%                   88.50%
  6|
  7|
  8|
  9|
 10|
 11|
 12|
 13|
 14|
 15|
 16|
 17|
 18|
--------------------------------------------------------------------------------
E5: (Value, Layout-P2) .885

Type entry or use / commands                                      /-? for Help
```

Figure 40. Spreadsheet Data Entries.

```
File: GRADE.BOOK                    REVIEW/ADD/CHANGE                    Escape: Main Menu
             F                          G                          H
  1|        DECEMBER                                                AVERAGE SCORE
  2|        Semester                    Total Score                  (D + E + F)/3
  3|                  91.70%                        2.539                    84.63%
  4|                  62.50%                        2.423                    80.77%
  5|                  91.30%                         2.77                    92.33%
  6|                                                    0                     ERROR
  7|                                                    0                     ERROR
  8|                                                    0                     ERROR
  9|                                                    0                     ERROR
 10|                                                    0                     ERROR
 11|                                                    0                     ERROR
 12|                                                    0                     ERROR
 13|                                                    0                     ERROR
 14|                                                    0                     ERROR
 15|                                                    0                     ERROR
 16|                                                    0                     ERROR
 17|                                                    0                     ERROR
 18|                                                    0                     ERROR
--------------------------------------------------------------------------------
H5: (Value, Layout-P2) @AVG(D5...F5)

Type entry or use @ commands                                        @-? for Help
```

Figure 41. Spreadsheet Data Entries.

89. NOTES:

a. Exam scores must be entered as decimal equivalents of the numeral 1 (see the bottom left corner of Figure 40) because the computer converts entries to percents in cells "D, E, and F."

b. Total raw scores for column "G" entries may be derived by multiplying the values found in column "G" cells by 100

90. Press the OPEN-APPLE and "S" keys at the same time to save the data and or the file.